MARKETING STEERS DIRECTLY OFF GRASS

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The probability of high grain prices and/or a shortage of grain for livestock feeding due to human competition has created a need for reevaluation of finishing cattle with a minimum use of grain. Cattle feeding, by necessity, may become more dependent upon range and pasture forage, thus rangelands may again be looked to as an area for production of slaughter cattle.

At one time animals were slaughtered directly off grass. We then went through a period of surplus grain throughout the United States and concentrates became a cheap source of animal feed. Now that grain surpluses are diminishing, grain prices have increased. This coupled with a weak fat-cattle market has forced many feedlots to produce grain-fed beef at a loss. As a result many young poorly conditioned cattle were slaughtered. They were marketed by retail stores under the term "grass-fat beef".

This helped to create renewed interest in grass-fat beef. However, grass-fat has received a lot of detrimental publicity due to a poorly marketed product. Much of the so called grass-fat beef was simply weaned calves or long yearlings fed for maintenance. Grass fat became a catch-all name for everything but grain-fat beef.

The vast majority of the semiarid and arid rangelands of the West have no alternate use for food production other than through grazing. It is important that we utilize our ranges and meadow lands to the fullest extent for meat production to conserve feedstuffs that could be consumed directly by man. Production of a slaughter animal, which is acceptable to the consumer, utilizing a maximum quantity of forage and a minimal quantity of grain is needed if we are to continue to eat beef at an acceptable price.

WINTER TREATMENT

Sixty-two steers, born in the spring of 1975 and weaned in September, were placed on one of four treatments for a winter calf study on October 8. These calves were on rake-bunched hay for most of the winter with baled hay fed as bunched hay became limited. The treatments were designed to test three *ad lib* fed energy-protein supplements against a daily hand fed control ration of 3 pounds barley plus biuret to make a 32% protein supplement. The liquid and soft-block supplements were composed of molasses, urea and fats. For the first half of the winter the soft block contained 20% protein and then was increased to 32%, with the liquid feed containing 32% protein throughout. The hard block was composed of crystalized molasses, containing animal and vegetable fats, with a protein content of 16%.

Gains and supplement consumption data for the winter period are presented in Table 1. These calves were on rake bunched hay for most of the winter, with gains being lower than desired. Previous work on the station indicates that steers should gain from 1 to 1.7 lb per day over the winter depending on relative price of cattle and feed and management program. Gains of these steers were lower than desired and may have been partially due to the hay feeding system as well as type of supplement. Forcing calves of this size to clean up bunched hay is not a good management practice. Results were particularly poor with the *ad lib* fed supplements. Problems with intake control contributed to the poor performance and, in some cases, it appeared that the time steers spent working on the supplements, may have resulted in reduced hay intake.

Table 1. Results of winter treatments

Item	Treatment			
	Control	Liquid	Solid block	Soft block
No. of steers	15	17	16	14
Initial wt., lb	336	333	329	331
Final wt., lb	491	380	378	432
Supplement intake, lb	3.3	0.6	1.5	4.4
Gain, lb	155	47	49	101
Average daily gain, lb	0.88	0.27	0.28	0.57

GROWING PHASE

Sixty steers with an equal number of calves from each of the four winter treatments were assigned to the growing and finishing study on May 11. Thirty-six steers were put on crested wheatgrass range and 24 split between alfalfa-fescue and clover-fescue irrigated pastures.

Management of the steers on range in the growing phase was such that they grazed the top third of each pasture, before moving to a fresh pasture. Attention was also given to feeding the supplement at the same time each morning in order to help maintain maximum grazing time and performance. Table 2 shows the daily supplement intake of the steers on range. Irrigated pasture steers were alternated between 2 pastures on each treatment every 2 weeks to allow for irrigation and regrowth. These animals received 3.2 lb of barley thru July 28 at which time barley was gradually increased to 5 lb by August 3.

Table 2. Daily supplement intake on range

Period	Biuret	Barley
5/11 - 6/15	.0	1
6/16 - 6/17	.03	1
6/18 - 6/19	.04	1
6/20 - 6/26	.05	1
6/27 - 7/3	.09	1
7/4 - 7/10	.10	1.3
7/11 - 7/17	.12	1.6
7/18 - 7/24	.14	1.8
7/25 - 8/3	.14	2.5

Results of the growing phase are presented in Table 3. The steers on range outgained the irrigated steers by .60 pounds per day on approximately one third the amount of supplement. The carrying capacity of the crested wheatgrass was about 2.5 acres per animal unit month (AUM). On ranges with a carrying capacity of less than 5 acres per AUM, the distance cattle have to travel for feed could have an adverse effect on rate of gain.

Table 3. Gain and consumption data during 84 day growing phase.

Item	Range	Clover-grass	Alfalfa-grass
No. of steers	36	12	12
Initial wt., lb	435	443	440
Final wt., lb	707	664	663
Supplement consumption, lb	1.30	3.33	3.33
Gain, lb	272	221	222
Average daily gain, lb	3.23	2.63	2.65

FINISHING PHASE

On August 3, 10 steers from the range treatment and 5 steers from each irrigated pasture treatment were shipped to Corvallis to be finished in a feedlot at Oregon State University. Data from these animals are not available at this time.

Steers remaining on range and irrigated pasture were given increasing amounts of grain at the rate of one half pound every two days until they reached a full feed of grain using the pastures and range as a roughage source. When grain reached 8 pounds daily per head the steers were fed one half the daily allowance morning and evening. Composition of rations fed during the finishing phase are shown in Table 4. Gain and consumption data for the finishing phase are presented in Table 5. The steers on irrigated pasture were fed grass hay for the last 31 days after frost stopped pasture growth.

Table 4. Composition of finishing rations

Ingredient	Range	Irrigated pasture
Barley, %	96.90	98.1
Biuret, %	1.25	.4
Salt, %	.80	1.0
Limestone, %	1.05	.5
Vitamin A, IU/day	20,000	20,000

Table 5. Gain and consumption data during 103 day finishing phase

		Irrigated pasture	
Item	Range	Clover-grass	Alfalfa-grass
No. of steers	25	6	6
Initial wt., lb	707	664	663
Final wt., lb	971	959	942
Grain consumption, lb	1240	1159	1159
Gain, lb	264	295	279
Average daily gain, lb	2.56	2.86	2.71

Table 6 summarizes results through the growing and finishing phases. Two steers on irrigated pasture and 1 steer on range died from unknown causes. One of the clostridials was suspected and the remaining animals were vaccinated.

Table 6. Combined gain and consumption data for the growing and finishing phase

Item	Range	Irrigated pasture	
		Clover-grass	Alfalfa-grass
No. of steers	25	6	6
Initial wt., lb	429	432	434
Slaughter wt., lb	971	959	942
Gain, lb	542	527	508
Average daily gain, lb	2.90	2.82	2.72
Total grain consump./hd, lb	1349	1439	1439
Av. daily consumption/hd, lb	7.22	7.71	7.71
Hay consumption/hd, lb	0	152	152

Of the 37 steers finished, 30 of the heavier animals were slaughtered at the Oregon State University meats lab in Corvallis. The slaughter and carcass data are summarized in Table 7. The range steers finished at a heavier weight and hung up a heavier carcass than the steers finished on irrigated pasture. The range steers also had a more desirable fat color. One steer went Choice with the remainder being split between Standard and Good. However, remember that the new guidelines for grading omit conformation, which under the old grading system would have raised these carcasses about one third of a grade. Seven steers on the range treatment had abcessed livers, with none from the irrigated pasture-hay treatment.

Table 7. Carcass data

Item	Range	Irrigated pasture	
		Clover-grass	Alfalfa-grass
No. of steers	20	5	5
Live wt., lb	1003	985	967
Carcass wt., lb	556	524	518
Dressing, %	55.5	53.2	53.6
Fat color[a], %	3.5	2.4	2.6
Abcessed livers	7	0	0

a Fat color: 5=white, 4=slight yellow tingle, 3=slightly yellow, 2=moderately yellow, 1=dark yellow.

DISCUSSION

The effect of winter treatment on summer gains was minimal, with little or no difference in summer gains between treatments. The most obvious and perhaps a very important effect is the weight at which the steers go on pasture. The heavier control steers finished at a heavier and more acceptable weight than the smaller animals. The only difference in performance due to winter treatments occurred during a 39-day period between April 2 and May 11, when steers were put on a meadow containing small amounts of spring growth and the control ration. Animals from the control treatment lost weight during this period, while the others gained 10 to 20 pounds.

The approximate value of the calves on this project if sold at various times is shown in Table 8. By keeping these steers to finish, an additional $226 was added to the value of each weaner. Considering barley at $100/ton and 1400 pounds per steer the additional cost of feed is $70. This leaves $260 per head to pay fixed costs and other expenses and is $155 more than available from the sale of the weaned calf. The operator has to take into account the cost of forage, interest on money, and other expenses which varies among systems and operations.

Table 8. Alternative marketing dates

Time of year	Average wt.	Average price	Total value
	lb	$/cwt	$
9/4/75 weaning	318	33.00	104.94
5/11/76 spring	440	36.00	158.40
8/3/76 fall	700	40.00	280.00
11/13/76 slaughter	1000	33.00	330.00